




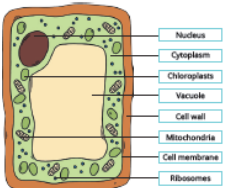
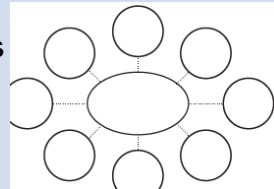




open
academy

Summer 2 - Year 8 Name:

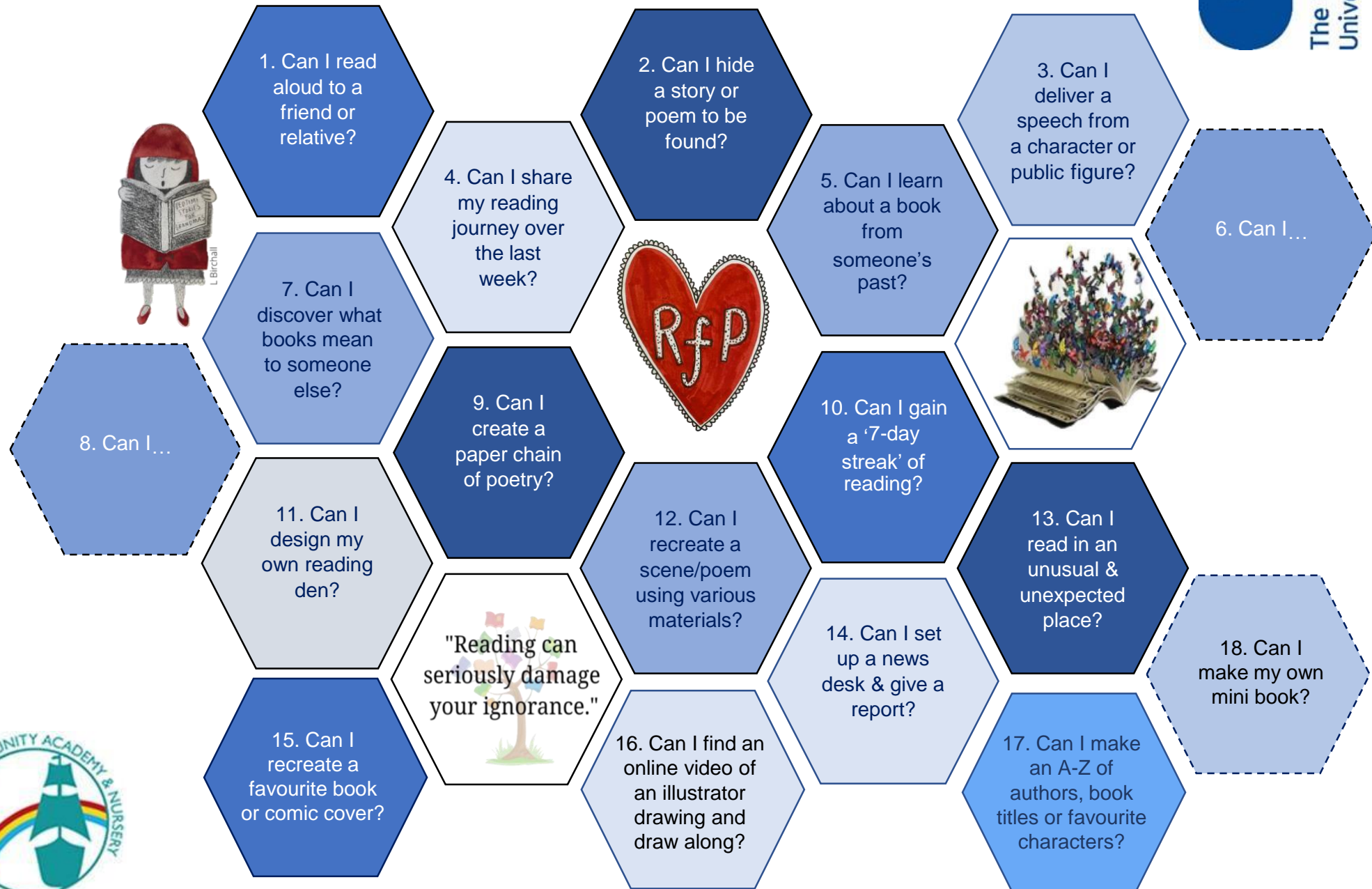
Just reading through your books or a knowledge organiser is not always an effective way to revise. Instead, you should do something with the information. Choose an example of the revision methods on the pages or see if you can come up with another method.

The knowledge is evolutionary not revolutionary. Approximately half the knowledge is new and half helps you revise. Many of the activities are changing. We hope you enjoy them.

Subject	Page Number	Subject	Page Number
Multidisciplinary Lessons	3	Geography	34
Art	6	Spanish	36
Textiles	12	History	42
Food	15	English	44
DT	24	Maths	48
PE	25	RE	51
Science	29	Music	53
Computer Science	33	A range of bonus ideas to prevent boredom	57

Idea	Explanation
<p>Make some flash cards or PowerPoint slides. Make top trumps.</p> 	<p>Write down key words, quotation, questions or equations on one side of a card. On the other side, write the definition or answer. Use them to test yourself.</p>
<p>Plant Cell</p>  <p>Make a poster.</p>	<p>Turn your notes into posters with lots of colour and illustrations. Summarising the key information in a different way is an effective way of learning and your brain will remember the colours more easily. Do the title last!</p>
<p>Draw spider diagrams, or for the adventurous mind maps.</p> 	<p>Write the topic/keyword in the centre of your page. Add everything you know in subtopics. Then explore each subtopic in turn adding more ideas. Colour/pictures help you recall.</p>
<p>Write a song or a rap.</p> 	<p>Are there songs that stick your head. Change the lyrics to the information you want to learn. If you record and listen back it will be a more fun way of revising.</p>
<p>Plan a lesson</p> 	<p>If you teach something to someone else the chance of recalling it is really high. This has been found to be the most effective way of learning something for the long term.</p>
<p>Write a story or comic strip.</p> 	<p>Take the keywords or facts that you need to learn and turn them into a story or a cartoon. The sillier the story the more likely you are to remember it.</p>
<p>Write a quiz. Design a game.</p> 	<p>Playing is how we learn as young children and it is a very powerful way of learning throughout life. If we enjoy the game it helps us remember.</p>

Sharing the Love of Reading: 11-16-year olds



1

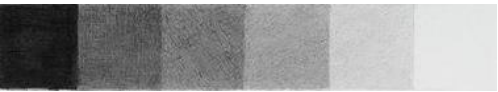
Methods of Recording

Observational drawing	Drawing from looking at images or objects
First hand observation	Drawing directly from looking at objects in front of you
Second hand observation	Drawing from looking at images of objects
Photographs	Using a camera or smartphone to record images will class as first hand observation
Sketches	Basic sketches and doodles can act as a starting point for development

Stages of Drawing

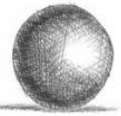
Basic shapes → Accurate shapes → Detail → Shade

2




Tonal shade
Produce a range of tones by varying the pressure and layering consider using softer pencils for darker shades


Alternative shade techniques




Cross hatching



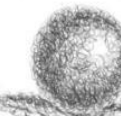
Hatching




Contour lines



Stippling



Scribble



Pattern

3

Annotation

Describes writing notes, using images and explaining your thoughts to show the development of your work.

Step 1 Describe
What is this an image of?
What have you done here?
What was this stage of the project for?

Step 2 Explain
How was this work made?
How did you produce particular effects? How did you decide on the composition?

Step 3 Reflect
Why did you use these specific methods? Why do particular parts work better than others? Why might you do things differently next time?

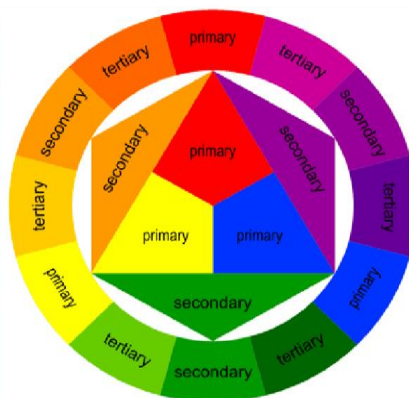
- 1- Formal elements are taught e.g. how to sketch and use tone to create a 3D effect. You will explore the colour wheel and how to use the basic materials in Art.
- 2-“The Greenman” – This project introduces you to facial proportions and how to blend oil pastels effectively. We also learn about clay and create small 3D Greenman faces. Examples of world renowned pieces of art are discussed.
- 3-“Perspective Landscapes”- This project introduces students to the concept of perspective and distance in Art. You learn about the technique of one-point perspective to create a feeling of depth in a landscape.

1

Media	The substance that an artist use to make art
Materials	The same as media but can also refer to the basis of the art work eg, canvas, paper, clay
Techniques	The method used to complete the art work, can be generic such as painting or more focus such as blending
Processes	The method used to create artwork that usually follows a range of steps rather than just one skill

3

Colour Theory	
Primary= RED, YELLOW, BLUE	Complimentary; Colours opposite on the colour wheel
Secondary= Primary+Primary	Harmonious; Colours next to each other on the wheel
Tertiary= Secondary+Primary	Monochromatic; shades, tones & tints of one colour
Shades – add black	Hue – the pigment
Tint – add white	Warm; RED, ORANGE YELLOW. Cold; BLUE, GREEN, PURPLE



2

Pencil		The basic tool for drawing, can be used for linear work or for shading
Biro		Drawings can be completed in biro and shaded using hatching or cross hatching
Pastel (chalk/oil)		Oil and chalk pastels can be used to blend colours smoothly, chalk pastels give a lighter effect
Coloured pencil		Coloured pencil can be layered to blend colours, some are water soluble
Acrylic paint		A thick heavy paint that can be used smoothly or to create texture
Watercolour		A solid or liquid paint that is to be used watered down and layered
Gouache		A pure pigment paint that can be used like watercolours or more thickly for an opaque effect
Pressprint		A polystyrene sheet that can be drawn into to print white lines – can be used as more than 1 layer
Monoprint		Where ink is transferred onto paper by drawing over a prepared surface
Collograph		A printing plate constructed of collaged materials
Card construction		Sculptures created by building up layers of card or fitting together
Wire		Thick or thin wire manipulated to create 2d or 3d forms
Clay		A soft substance used for sculpting, when fired can be glazed to create shiny colourful surfaces
Batik		A fabric technique using hot wax to resist coloured inks
Silk painting		Fabric inks painted onto silk, Gutta can be used as an outliner to prevent colours mixing

1 Formal Elements of Art

LINE	the path left by a moving point, e.g. a pencil or a brush dipped in paint. It can take many forms. e.g. horizontal, diagonal or curved.
TONE	means the lightness or darkness of something. This could be a <u>shade</u> or how <u>dark</u> or <u>light</u> a <u>colour</u> appears
TEXTURE	the surface quality of something, the way something feels or looks like it feels. There are two types : <u>Actual</u> and <u>Visual</u>
SHAPE	an area enclosed by a <u>line</u> . It could be just an outline or it could be <u>shaded</u> in.
PATTERN	a design that is created by repeating <u>lines</u> , <u>shapes</u> , <u>tones</u> or <u>colours</u> . can be <u>manmade</u> , like a <u>design</u> on fabric, or <u>natural</u> , such as the markings on animal fur.
COLOUR	There are 2 types including Primary and Secondary . By mixing any two <u>Primary</u> together we get a <u>Secondary</u>

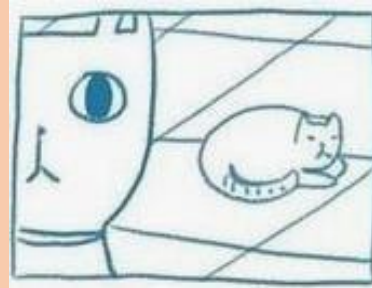
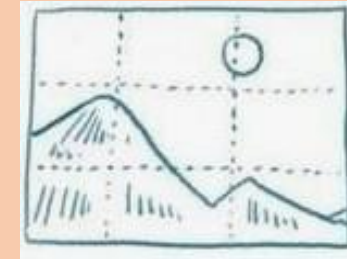
3

A Rough	A Visual/ Maquette	Final Piece
A basic sketch of a final idea	A small image or model created in selected materials	An image or sculpture pulling all preparatory work together

2

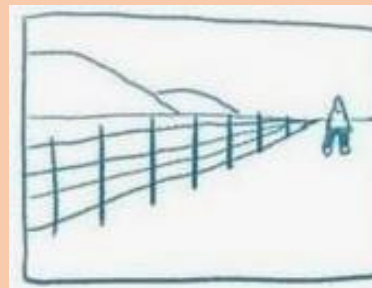
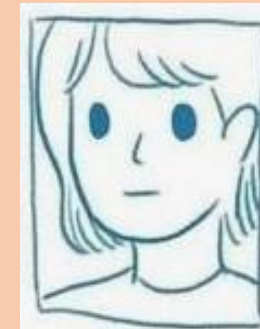
Composition Layouts

Rule of thirds – Place focal objects at 1/3 or 2/3 of the image horizontally or vertically. Not in the middle



Balance elements. If there is an emphasis on one side balance it out with smaller objects on the other

Simplify and fill. Enlarge or crop the image to fill the space



Use lines. Lines will draw the viewer in, they don't have to be straight, consider S or C

Micro-organisms

Micro-organisms are tiny forms of life. They can only be seen under a microscope and are sometimes called microbes.

They spoil food and make it unsafe to eat because they contaminate it with their waste products, their physical presence and the toxins they produce.

What micro-organisms can spoil food and make it unsafe to eat?

There are three groups of micro-organisms that you need to know about that spoil food and cause food poisoning. These are..

- Bacteria
- Moulds
- Yeasts

Micro organisms need 5 conditions to grow and multiply:

1. A warm temperature
2. Plenty of moisture (water)
3. Plenty of food
4. The right PH level (not too acidic or alkaline)
5. Enough time (bacteria split every 10-20 minutes)

High risk foods

- High risk food have ideal conditions for bacteria
- High risk foods are ready to eat foods that could grow harmful bacteria
- They are moist and high in protein which is food for bacteria.
- High risk foods have a short shelf life - you can't keep them for long or the bacteria might multiply to dangerous levels.

Examples of high risk foods:

Cooked meat, fish and poultry, dairy products (eggs, cheese etc.), gravies, stocks and sauces, shellfish, cooked rice.

Example exam questions:

What five conditions to bacteria need to grow and multiply? (5 marks)

What is a high risk food? (5 marks)

Storing food safely

Cooking (75°C)	The danger zone (5°C-63°C)
<ul style="list-style-type: none">• Cooking food above 75°C kills bacteria• Re-heat food properly, only once. Reheat food so 75°C for at least 3 minutes• Check the food is 75°C with a temperature probe	<ul style="list-style-type: none">• Bacteria can grow and multiply quickly between 5°C to 63°C.• This is called the danger zone• The optimum temperature for bacterial growth is 37°C
Chilling (0°C - 5°C)	Freezing (-18°C)
<ul style="list-style-type: none">• Keeping food between 0°C and 5°C slows down the growth of bacteria• This extends the shelf life of food• Chilling food doesn't change the properties much - food looks and tastes the same	<ul style="list-style-type: none">• Freezing food below -18°C stops bacteria growing - they become dormant• Freezing generally extends shelf life and the nutrients aren't lost• It doesn't kill the bacteria though. They become active again once the food defrosts.

Preparing self for cooking

- Tie hair back to prevent hair and dandruff falling in food
- Take off coats and blazers
- Wear an apron to prevent bacteria transferring from our clothes to our food
- Wash hands with hot soapy water to kill bacteria

Preparing the room for cooking

- Sanitise all work surfaces
- Check equipment is clean and dry
- Tuck all stools in as they can be a trip hazard
- Put all high risk foods in the fridge to slow bacteria growth

Wash your hands after:

- Coughing
- Sneezing
- Tying shoe laces
- Going to the toilet
- Touching hair or face

Nutrients

Macro nutrients - needed in large quantities in the diet. The three macro nutrients are: PROTEIN, CARBOHYDRATES, FAT

Micro nutrients - needed in small quantities in the diet. The two micro nutrients are: VITAMINS, MINERALS

Protein

Proteins are made up of amino acids, often referred to as the 'building blocks' of the body. Non-essential amino acids can be made by the body, however, essential amino acids can't be made by the body and we must get from the food we eat.

High biological Value (HBV) proteins contain all the essential amino acids we need and generally come from animal sources. Low biological value (LBV) proteins are missing one or more essential amino acids and generally come from plant sources.

Food sources

HBV - beef, pork, lamb, poultry (chicken, turkey, duck), fish, cheese, butter milk

LBV - beans, chickpeas, lentils, peas, nuts, seeds, found in smaller amounts in some vegetables such as spinach and broccoli.

Function

Needed for growth from childhood to adulthood and the growth of nails, hair and muscle mass, repair of muscles, tissues and organs after illness or injury and to make enzymes for digestion and antibodies to stop us getting ill.

Example exam questions:

What are the two types of fat? (2 marks)
Explain the difference between a HBV and LBV protein (6 marks)

Carbohydrates

There are two types of carbohydrates, complex and simple. They are also known as starchy (complex) and sugary (simple).

Food sources

Starchy - bread, rice, pasta, potatoes, bagels, oats, flour, cereal and some vegetables.

Simple - fruit, some vegetables, chocolate, sweets, biscuits, cakes

Function

Starchy/complex carbohydrates are digested slowly and provide long term energy.

Sugary/simple carbohydrates are digested slowly and provide short term energy

Dietary related health problems

Too much sugar can cause:

1. Weight gain (which can lead to obesity)
2. Tooth decay
3. Diabetes (your body cannot produce enough/any insulin to regulate your blood sugar levels)

Too much salt can cause:

1. High blood pressure (this can increase your risk of heart disease and a stroke).

Too much saturated fat can cause:

1. Weight gain (which can lead to obesity)
2. High cholesterol (this narrows arteries making it harder for the blood to travel around, putting you at risk of heart disease).

Fat

There are two types of fat, saturated and non saturated.

Saturated fats are classed as 'unhealthy fats', they are solid at room temperature and are generally animal based.

Unsaturated fats are classed as 'healthier fats' and are liquid or soft at room temperature and come from plant based sources.

Food sources

Animal - beef, chicken skin, processed meat (sausages, salami, pepperoni), bacon, butter, cheese, full fat milk

Plant - vegetable oils (sunflower, olive, rapeseed), avocado, nuts, seeds

Function

Keeps us warm (provides insulation), secondary source of energy, protects vital organs and bones.

The Eatwell guide



The Eatwell guide

The Eatwell guide is a government guide designed to show you the proportions of different foods groups you should eat over a day or more.

Tips on making healthy choices from the eatwell guide:

Fruit and vegetables: eat 5 portions of fruit and vegetables a day, this should make up 1/3 of your plate a day, fresh, frozen, canned, dried and fruit juice/smoothies all count, don't exceed 150ml of fruit juice/smoothie a day as it can cause tooth decay, try snacking on fruit over high sugar and fat foods,

Potatoes, bread, rice, pasta and other starchy carbohydrates: choose non-sugary cereals, leave the skin on potatoes, choose wholemeal options of foods such as bread, rice and pasta.

Oils and spreads: choose unsaturated fats such as vegetable oils and margarine over butter, use in small amounts.

Dairy and alternatives: choose lower fat options such as skimmed milk and low fat and salt cheese, choose low sugar yogurts and add fruit as a natural sweetener.

Beans, pulses, fish, eggs, meat and other proteins: eat more beans and pulses as they are high in fibre and fill you up for longer, cut the visible fat off meat, choose lower fat meat options, eat 2 portions of fish a week.

Water: drink 2-3 litres of water a day, choose lower sugar option drinks.

8 Guidelines for Healthy Eating

1. Base your meals on starchy carbohydrates	<ul style="list-style-type: none"> This should make up 1/3 of your diet Chose high fibre, whole grain options e.g. pasta, rice Try to include one starchy food with each meal 	5. Eat less salt - no more than 6g a day for adults	<ul style="list-style-type: none"> Eating too much salt can raise blood pressure, this puts you at high risk of heart disease or a stroke Most of the salt you eat is already in food, check the labels to help you choose low salt options
2. Eat lots of fruit and vegetables	<ul style="list-style-type: none"> Try adding a banana to cereal or swap crisps for fruit Always serve main meals with two vegetables Beans and pulses can count as 1 of your 5 portions 	6. Get active and be a healthy weight	<ul style="list-style-type: none"> Regular exercise can reduce your risk of getting serious health conditions Aim for 150 minutes of exercise a week
3. Eat more fish - including one portion of oily fish	<ul style="list-style-type: none"> Fish is a source of protein and vitamins and minerals It contains omega 3 (good for eyes, skin, brain heart) Oily fish includes: salmon, herring, mackerel, sardines 	7. Don't get thirsty	<ul style="list-style-type: none"> 6-8 cups a day, 2-3 litres Avoid sugary and fizzy drinks as they're bad for teeth Remember fruit juice and smoothies is also high in sugar
4. Cut down on saturated fat and sugar	<ul style="list-style-type: none"> All types of fat are high in energy and should be eaten in small amounts Excess sugar can cause weight gain and tooth decay 	8. Don't skip breakfast	<ul style="list-style-type: none"> Kick starts you for the day choose healthy low fat, sugar and salt and high fibre Choose low sugar cereals and granola

Seasonal Produce and Air Miles

Seasonal produce

Seasonality of food refers to the times of year when the harvest or the flavour of a given type **food** is at its peak. This is usually the time when the item is the cheapest and the freshest on the market. The **food's** peak harvest time usually coincides with when its flavour is at its best.

Advantages of local, seasonal foods

- Often cheaper as it is not imported and there is a larger quantity of the food available
- Fresher as it has taken less time to travel and less storage time.
- High in nutrients - fruit and vegetables lose nutrients over time after being picked. With less travel and storage time, they lose less nutrients.
- Tastes better as it is fresher and higher in nutrients.

Disadvantages of local, seasonal foods

- There is a smaller range of foods available
- Not importing foods means not supporting farmers in developing countries.

Examples of UK grown produce			
Autumn	Winter	Spring	Summer
Apples Mushrooms Beetroot Pears Potatoes Pumpkin Garlic	Cauliflower Sprouts Suedes Sweet potato Broccoli Oranges Cabbage	Strawberry Carrot Lettuce Leeks Asparagus Peas Spring onion	Cucumber Aubergine Tomato Raspberry Courgette Onion Corn on the cob

Food miles

- If we're not eating fresh, seasonal food grown in the UK, the food has travelled from abroad to reach us.
- Food miles are clocked up by the fresh fruit and vegetables arriving by plane from across the globe.
- Then the fruit gets loaded in to lorries and driven across various parts of the country to supermarkets
- Then once on a shelf the products are then bought by people who then drive it back home.

Food miles are the measure of the distance a food travels from field to plate. This travel adds substantially to the Carbon Dioxide emissions that are contributing to climate change. The amount of food being flown into the UK doubled in the 1990s and is predicted to rise further each year. Consumers are also directly responsible for increased food miles. We now travel further for our shopping and use the car more often to do it.

Advantages of importing foods

- A wide range of foods are available in our shops all year round e.g. strawberries at Christmas.
- Less energy is used growing certain crops in poorer countries as there is no need for heating glasshouses etc. (less damage to the environment)

Disadvantages of importing foods

- Its harder to monitor food production standard and conditions for workers in countries far away.
- Taxes on imported foods means farmers in developing countries don't always receive a fair price for their foods.
- Food that has travelled a long distance is less fresh by the time it reaches the shelves
- People do not buy local produce as much so local UK farmers don't make as much money
- Increased road traffic as more food is being transported around the holiday
- There is increased used of fuel for the road transport plus the carbon dioxide emissions related
- The amount of food flown into the UK increases each year which means the UK is not self-sufficient
- Pressure to expand food production has led to the destruction of environments in some poorer countries
- Over 60% of household waste is a result of food packaging
- Fresh spinach loses over 90% of its vitamin C in the first 24 hours of harvest

Examples of imported foods

Pineapple, mango, tomatoes, celery, potatoes, bananas, nuts, sugar, chicken, lamb, beef, fish, oil, cocoa beans, grapes, tea, coffee, rice, soya bean, herbs, spices, olives, capers, avocado, cauliflower, broccoli

Food Packaging

Food packaging

Food is packaged to protect the product during transport and whilst sitting on shelves.

Why is food labelling important?

Symbols on packaging show important information to customers.

Example exam questions:

Seasonal produce and air miles

What are the advantage of buying locally produced, seasonal produce? (6 marks)

Explain the disadvantages of buying imported foods. (10 marks)

Explain the term 'air miles' (3 marks)


Explain the term 'seasonal produce' (3 marks)

How might a restaurant use the fact they only use

Food packaging

Compare the two dishes and explain which dish is a healthier choice. Use the traffic light system to help you with your answer (6 marks).

Why is it important to include a vegetarian symbol on food packaging of vegetarian products? (2 marks)

				
Giving farmers a fair price for their products.	Forest Stewardship Council - helping effectively manage forests.	Suitable for home freezing.	Eggs have been produced to the highest standards of food safety.	Vegetarian approved - free from animal products.
				
This product can be recycled.	A British organisation that promotes and regulates food quality.	Tidy man - do not litter.	Food which abides by the Islamic law. The Islamic way of slaughtering is cutting the throat and draining the blood.	An ethical food label - helping farm animals have a good life.

Reference intake

You'll see reference intakes referred to on food labels. They show you the maximum amount of calories and nutrients you should eat in a day. Most packaging has a colour coded label on the front to help you make healthy choices.

Reference in take amounts:

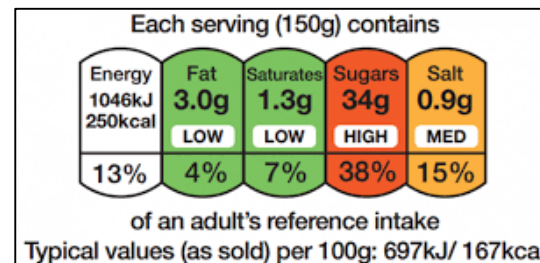
Kcal (calories) - 2000

Total Fat -70g

Saturated fat - 20g

Sugar - 90g

Salt - less that 6g



Red means HIGH in that nutrient
Amber means MEDIUM in that nutrient
Green means LOW in that nutrient

Reference intakes are not meant to be targets. They just give you a rough idea of how much energy you should be eating each day, and how much fat, sugar, salt and so on.

The percentages represent how much of your reference intake is in the product, e.g. the product has 3.0g of FAT in it, that is 4% of 70g of fat.

Components of Physical Fitness

Aerobic Endurance

The ability of the heart and lungs to work hard to supply nutrients and oxygen to the muscles during exercise.

Muscular Endurance

The ability of the muscles to work efficiently for long periods of time

Speed

The ability to cover a distance quickly. There are 3 types of speed (Accelerative speed, Pure speed and Speed Endurance.

Muscular Strength

The maximum force, measured in kilograms (Kg) or newtons (N) that can be generated by a muscle or group of muscles.

Flexibility

The range of motion in all joints of the body and the ability to move a joint fluidly through its complete range of movement.

Body Composition

The amount of fat to fat-free muscle mass.

Can you now link each of the physical components to a sporting example? E.g. what sport would you usually see flexibility being used?

Watch
this!



Why should we exercise?



Sport England posted an infographic on Twitter to give reasons why walking for 30 minutes each day was important. Scan this QR code to see the benefits.



Components of Skill-related Fitness

Agility – The ability of a sports performer to quickly change direction without losing balance or time

Balance – The ability to maintain your centre of mass over a base of support. There are two forms of balance (static which is maintaining balance in a stationary position and Dynamic which is maintaining balance while in motion)

Co-ordination – The ability of the body to work together to move smoothly and accurately

Power – The ability to use strength and speed. It is the work done in a unit of time and is calculated in the following way

Power = Force (Kg) x Distance (m) / time (mins or seconds)

Reaction time – The time taken for a sports performer to respond to a stimulus, for example, the time taken for a sprinter to react to the starter gun.

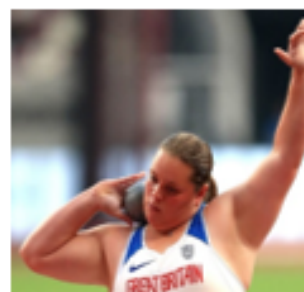


Athletics

Athletics events consist of three main areas. Running, Jumping and Throwing.

Skill	Description
Running	An action to move quickly with the correct technique using arms and legs as efficiently as possible. Activities include 100m, 200m, 400m, 800m and relay.
Jumping	The technique to propel the body into the air to either cover distance, height or both. The events are long jump, triple jump and high jump.
Throwing	The ability to propel an object through the air as far as possible. The events are Javelin, Discus and Shot Putt.

British athletes and achieving their goals



1. How would both Mo Farrah and Sophie McKinna (from Norfolk) use the F.I.T.T principle in their sports?

2. Why is rest and recovery important for an athlete?

3. What components of fitness would Mo Farrah need which is different to Sophie McKinna and why would these be important?

Diet and Nutrition for Sport

Nutrient	Function and Examples
Protein	 <p>Important for growth and development of muscle and tissue as well as making and repairing cells inside the body. Poultry, Fish, Nuts, Dairy and Soy are examples.</p>
Carbohydrates	 <p>Provide energy for the body over a longer period of time and helps fight disease. Potatoes, Pasta, Pulses and Fruit are sources.</p>
Fibre	 <p>Important for preventing constipation and also helps decrease the risk of Type 2 diabetes, heart disease and high cholesterol in later life. Fresh fruits (skin on) Dried fruit, Vegetables, Wholegrains such as brown rice and wheat bread are sources.</p>
Calcium	 <p>Important for strong bones and teeth. It also helps with muscle function, blood clotting and nerve transmission. Dairy products, leafy green vegetables, orange juice are sources.</p>
Vitamin A, C and D	<p>Vitamin A is important for eyesight, growth and the functioning of the immune system as well as healthy skin. Dark green vegetables e.g. spinach. Sweet potatoes, papayas, milk and eggs.</p> <p>Vitamin C is important for decreasing the amounts of colds you get, fight infections, wound healing, healthy gums and skin and also acts as an antioxidant. Citrus fruits, broccoli, strawberries, tomatoes, peppers and kale are the sources</p> <p>Vitamin D is important for strong bones and teeth as it absorbs calcium. It is also good for immune function. Milk, oily fish, egg yolk and even the sunlight are sources.</p>

Year 8 Forces pressure and moments

Force	Push or pull	Stretch, squash, turn.
Contact force	Exerted between two objects when they touch	Friction, air resistance, tension.
Non-contact force	Exerted between two objects without touching	Gravity, electrostatic forces, magnetic forces.

Weight	Force acting upon an object due to gravity	Newton (N)
Mass	How much matter	Kilograms (Kg)

Pressure

Pressure = Force ÷ Area

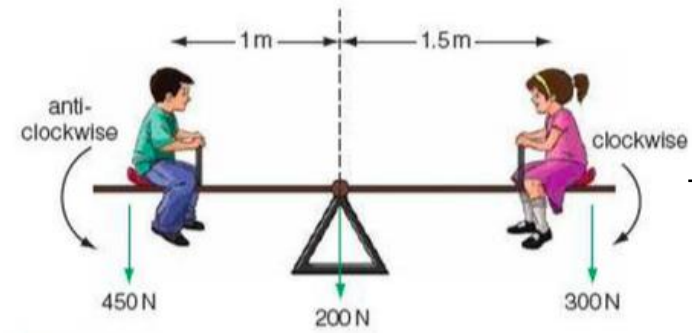
$P = F \div A$

Fluid	A liquid or gas
Flows and changes shape to fill a container.	

Hydraulic machine	Use liquids to transmit pressure
-------------------	---

Atmospheric pressure	
Caused by billions of air particles colliding with a surface.	
Upthrust	
Resultant force exerted by a fluid	

Pressure and depth	
Pressure on divers depends on weight of water above	



Moments, levers and gears

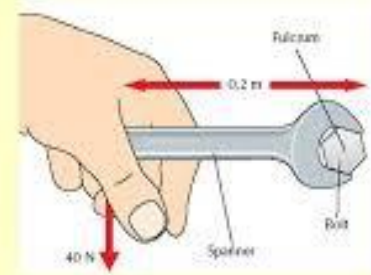
Moment	Turning effect of a force about a pivot
--------	--

Lever	A small force exerted with a long lever applies a large force
-------	--

Principle of moments	
In a balanced system, the sum of the clockwise moments = the sum of the anti-clockwise moments	

What is the moment of the force (turning effect) that is being exerted in the following diagram?

Answer:
Moment = Force x distance from fulcrum
 $40\text{N} \times 0.2\text{m} = 8\text{ Nm}$



$M = F \times d$

Moment = force X distance

Earth's resources and climate change

Fuels as Energy Resources

Fuels store chemical potential energy. Many fuels are used a great deal by humans, including fossil fuels:

- Oil – used to make petrol/diesel/aircraft fuel especially
- Coal – burned in power stations to generate electricity
- Natural gas – used as a fuel for heating homes and for cooking.

These are all very useful fuels, but the problem is that they are **non-renewable** and when they are burned, carbon dioxide is produced. Carbon dioxide contributes to climate change because it is a greenhouse gas.

Other Energy Resources

We don't have to use fossil fuels for the uses given above. There are many other energy resources on Earth, including many **renewable resources**. E.g.

- Sunlight, which we can use to generate electricity with solar cells
- Wind, which can be used to generate electricity using wind turbines
- The tides, which can be used to generate electricity
- Waves in the sea, which can be used to generate electricity.

Choosing energy resources

Many things should be considered to choose an energy resource:

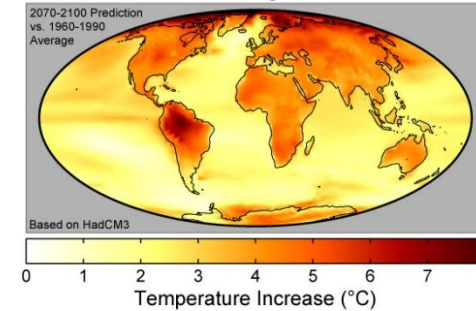
- The reliability of the energy resource
- The usefulness of the energy resource
- How long the resource lasts, and if it is renewable
- The environmental impact of the energy resource.

Carbon dioxide, water vapour and methane	<i>Examples of greenhouse gases that maintain temperatures on Earth in order to support life</i>
The greenhouse effect	<i>Radiation from the Sun enters the Earth's atmosphere and reflects off of the Earth. Some of this radiation is re-radiated back by the atmosphere to the Earth, warming up the global temperature.</i>

Global warming	<i>Levels of CO₂ and methane in the atmosphere are increasing.</i>	Decreased land availability from sea level rise, temperature rise damages delicate habitats, extreme weather events harm populations of plants and animals.
----------------	---	---

Effects of climate change
Rising sea levels
Extreme weather events such as severe storms
Change in amount and distribution of rainfall
Changes to distribution of wildlife species with some becoming extinct

Global Warming Predictions



Carbon dioxide	<i>Human activities that increase carbon dioxide levels include burning fossil fuels and deforestation.</i>
Methane	<i>Human activities that increase methane levels include raising livestock (for food) and using landfills (the decay of organic matter released methane).</i>
Climate change	<i>There is evidence to suggest that human activities will cause the Earth's atmospheric temperature to increase and cause climate change.</i>

The total amount of greenhouse gases emitted over the full life cycle of a product/event. This can be reduced by reducing emissions of carbon dioxide and methane.

There is a global consensus about global warming and climate change based on systematic reviews of thousands of peer reviewed publications.

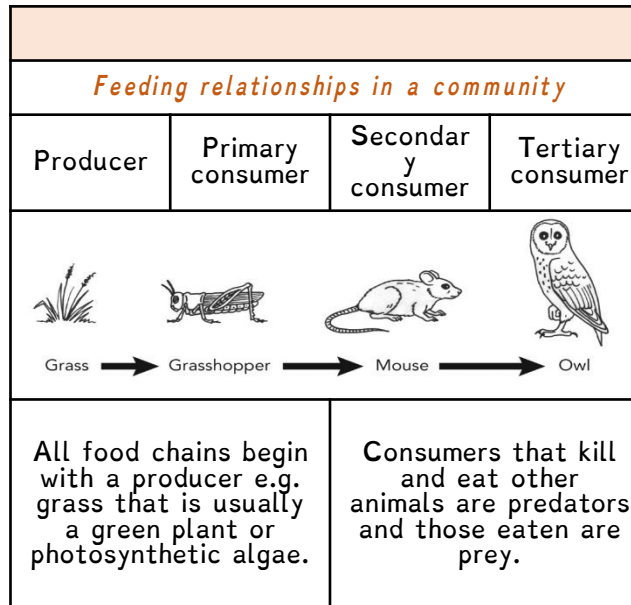
POND LIFE (COMMUNITIES AND DISTRIBUTION OF SPECIES)

Environment	The conditions surrounding an organism; abiotic and biotic.
Habitat	Place where organisms live e.g. woodland, lake.
Population	Individuals of a species living in a habitat.
Community	Populations of different species living in a habitat.

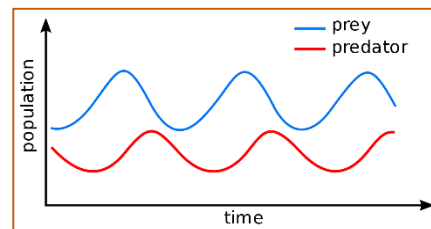
Plants	Animals	Extremophiles
Cactus in dry, hot desert	Polar bear in extreme cold artic	Deep sea vent bacteria
No leaves to reduce water loss, wide deep roots for absorbing water.	Hollow hairs to trap layer of heat. Thick layer of fat for insulation.	Populations form in thick layers to protect outer layers from extreme heat of vent.



Organisms adaptations enable them to survive in conditions where they normally live.



In a stable community the numbers of predators and prey rise and fall in cycles.



Non-living (ABIOTIC) factors that affect a community	Living factors (BIOTIC) that affect a community
Living intensity.	Availability of food.
Temperature.	
Moisture levels.	New predators arriving.
Soil pH, mineral content.	
Wind intensity and direction.	New pathogens.
Carbon dioxide levels for a plant.	
Oxygen levels for aquatic organisms.	One species outcompeting so numbers are no longer sufficient to breed

Competition	Plants in a community or habitat compete with each other for light, space, water and mineral ions.
	Animals compete with each other for food, mates and territory.
Interdependence	Species depend on each other for food, shelter, pollination, seed dispersal etc. Removing a species can affect the whole community

Summary

Computers require **input** hardware, **processing** hardware, **storage** hardware and **output** hardware.

CPU - The **Central Processing Unit** or **CPU** is arguably the most important component of a computer. You can think of the CPU as being like the brain in a human.

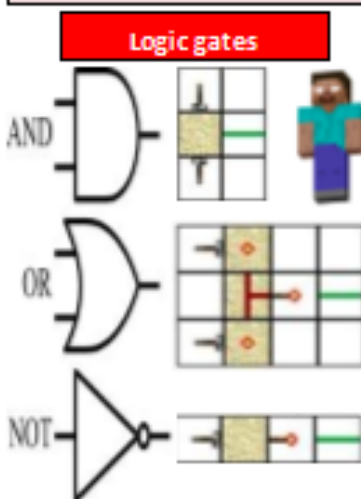
Storage - stores programs and files long term, even when they are not in use. Devices such as hard drives, USB memory sticks or SD cards are used to store files such as photos, music and software applications long term.

An **input device** is any piece of computer hardware used to provide data to a computer system. Examples include: keyboard, mouse, scanner, digital camera and webcam.

An **output device** is any piece of computer hardware used to communicate the results of data that has been processed. Examples include: monitor, printer, projector and speaker.

Binary is still the language for computers. Binary's 0 and 1 method is quick to detect an electrical signal's off or on state.

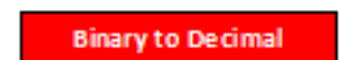
Binary is the most efficient way to control logic gates



AND Gate will only turn on if both switches are in the on position.

OR Gate—When any switch is turned on, the power is turned on

NOT Gate—A light switch.



Key Vocabulary

Binary	Base 2. Symbols include up of 1 and 0
Decimal	Base 10 also known as denary. Symbols include up of 0 1 2 3 4 5 6 7 8 and 9.
CPU	Central Processing Unit - the brains of the computer that processes program instructions. Also called a microprocessor .
Logic gate	Compares the states with inputs to decide what the state at their output should be
Hardware	The physical parts of a computer system, e.g. a graphics card, hard disk drive and CD drive.
Input Device	Hardware that sends data to a computer, allowing you to interact with and control it.
Output Device	Hardware which converts information into human-readable form. It can be text, graphics, tactile, audio, and video .
Storage	Hardware on which information can be stored
Software	Software is the programs that run on a computer. Commonly called apps

Units of information

Bit	1 or 0
Byte	8 bits
Kilobyte	1,000 bytes
Megabyte	1,000 kilobytes
Giga byte	1,000 Mega bytes
Terabyte	1,000 Giga bytes.

<http://bit.ly/2Qxi9ab>





Year 8 Knowledge organiser: Tourism



Research: How much tourism is there in Norfolk? How is the current crisis causing disruption to the industry? What can we do to help?

Key Ideas:

1. I can define tourism
2. I can describe examples of tourism
3. I can describe good and bad impacts of tourism
4. I can explain how a tourism resort changed over time
5. I can suggest ways tourism can be more sustainable

Skills

- ❑ To locate tourism resorts in the UK and in mainland Europe
- ❑ To use mapping to investigate features and attractions
- ❑ To analyse a range of graph types to describe changes in tourism
- ❑ To construct a timeline of resort change
- ❑ To write a detailed piece of extended writing

Places and Environments

- ❖ Great Yarmouth
- ❖ Blackpool
- ❖ The Lake District
- ❖ France/Spain
- ❖ India
- ❖ Tanzania

Key Terms Used in this Unit

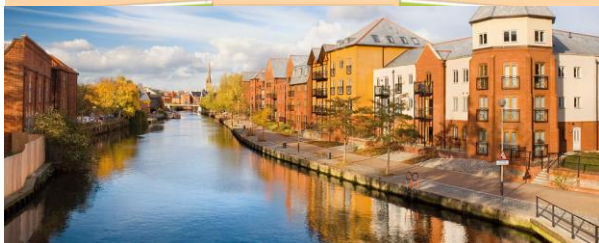
- ❑ Resort
- ❑ Attractions
- ❑ Investment
- ❑ Infrastructure
- ❑ Inward Investment
- ❑ Service Sector
- ❑ Seasonal Unemployment
- ❑ Resource depletion
- ❑ Decline
- ❑ Second Homes
- ❑ Honeypot Sites
- ❑ Congestion
- ❑ Renewable energy
- ❑ Safari
- ❑ Cruise
- ❑ Cultural
- ❑ Historic
- ❑ Business
- ❑ Eco-resort

Topics covered

- ✓ What is tourism?
- ✓ How has tourism changed?
- ✓ Natural and man-made attractions
- ✓ Tourism in Europe
- ✓ Good and Bad effects of tourism
- ✓ Resort changes over time
- ✓ Re-inventing a UK resort
- ✓ Eco-tourism



Year 8 Local Fieldwork Project – Norwich



Create a project on the following.

- ✓ What is Norwich like?
- ✓ Natural/man-made features
- How is Norwich changing?
- ✓ Do geographical ideas and theories work in Norwich?
- ✓ What are data types?
- ✓ How can I collect data?
- ✓ How can I present data?
- ✓ What does my data tell me?

Designed by KMU for Open Academy 2019

Key Ideas:

1. I can define my local area
2. I can describe different areas within Norwich
3. I can ask geographical questions about my local area
4. I can test ideas and theories about my local area
5. I can report on the findings of my local area investigation

Skills

- ❑ To use GIS (digital mapping) to describe/locate my local area
- ❑ To use mapping to investigate features
- ❑ To collect primary (my own) data on my local environment (could also be secondary data)
- ❑ To construct tables/graphs/sketches to record observations
- ❑ To write a detailed analysis of results

Places and Environments

- ❖ Open Academy
- ❖ Heartsease
- ❖ Norwich
- ❖ Trowse
- ❖ Riverside
- ❖ Anglia Square
- ❖ Gentlemans Walk
- ❖ Chapelfield

Key Terms Used in this Unit

- ❑ Primary data
- ❑ Secondary data
- ❑ Hypothesis
- ❑ Transect
- ❑ Sampling
- ❑ Bi-polar analysis
- ❑ Fieldsketch
- ❑ Pie chart
- ❑ Scattergraph
- ❑ Radar graph
- ❑ Correlation
- ❑ Proportional symbols
- ❑ Averages (mean/mode/median)
- ❑ Conclusion
- ❑ Judgement
- ❑ Reliability
- ❑ Limitations
- ❑ Evaluation

Module 5: Gute Reise! (Have a Good Trip!)

Here is the vocabulary you will need for Module 5.

Remember, you can hear the German pronunciation by clicking on the 'Listen' links next to the loudspeakers.

In der Stadt • In town	
Es gibt ...	There is ... / There are ...
Es gibt ein/eine/einen ...	There is/are a ...
Es gibt kein/keine/keinen ...	There isn't/aren't ...
in der Nähe von ...	near to
in der Nähe ...	nearby
der Bahnhof(-e)	railway station(s)
der Imbiss(-e)/ die Imbissstube(-n)	snack stand(s)
die Kegelbahn(-en)	bowling alley(s)
das Kino(-s)	cinema(s)
die Kirche(-n)	church(es)
der Marktplatz(-e)	market square(s)
der Park(-s)	park(s)
das Schloss(-er)	castle(s)
das Schwimmbad(-er)	swimming pool(s)
die Eisbahn(-en)	ice rink(s)
der Fischmarkt(-e)	fish market(s)
das Kindertheater(-)	children's theatre(s)
der Radweg(-e)	cycle path(s)
das Sportzentrum (die Sportzentren)	sports centre (sports centres)
der Stadtpark(-s)	city/town park(s)
der Wasserpark(-s)	water park(s)



[Listen](#)

In this Module you will learn how to:

- talk about what there is / isn't in a town
- Buy souvenirs
- Buy snacks and drinks
- talk about holiday plans
- Understand longer spoken texts.

Keep practising your German vocabulary on www.quizlet.com

• Either:

click on this link:

https://quizlet.com/_8iewzt?x=1qqt&i=25q2il

• Or:

use your class link to go directly to your Quizlet class.

Souvenirs • Souvenirs

der Aufkleber	sticker
das Freundschaftsband	friendship bracelet
die Kappe	(baseball) cap
der Kuli	biro
das Kuscheltier	cuddly toy
die Postkarte	postcard
der Schlüsselanhänger	key ring
die Tasse	mug/cup
das Trikot	(football) shirt
Wie viel kostet ...?	How much does ... cost?
Wie viel kostet das?	How much does it cost?
Es kostet €16.	It costs 16 Euros.



[Listen](#)



www.textivate.com

Username: openacademy

Password: surname800

Go to 'my resources' to find your work.

Verkaufsgespräch • Sales conversation

Ich gehe einkaufen.	I am going shopping.
Ich möchte ...	I would like ...
Ich möchte ... kaufen.	I would like to buy ...
Haben Sie ...?	Do you have ...?
Kann ich dir helfen?	Can I help you?
Sonst noch etwas?	Anything else?
alles zusammen	all together



[Listen](#)

Snacks und Getränke kaufen • Buying snacks and drinks

die Bratwurst	fried sausage
der Hamburger	hamburger
die Pizza	pizza
die Pommes	chips
der Salat	salad
das Eis	ice cream
die Cola	cola
das Mineralwasser	mineral water
der Tee	tea
das Fleisch	meat
der Ketchup	ketchup
die Mayo(nnais)/ Majonäse	mayo(nnais)
der Senf	mustard
Ich möchte einmal/ zweimal/dreimal ...	I would like one/two/three ...
Ich hätte gern ...	I would like ...
Das macht €8.	That's €8.
Ich esse ... gern.	I like eating ...
Ich trinke ... gern.	I like drinking



[Listen](#)

In den Sommerferien

• During the summer holidays

Was wirst du machen?	What will you do?
Ich werde ...	I will ...
Wir werden ...	We will ...
klettern	climb
im Meer schwimmen	swim in the sea
rodeln	toboggan
im See baden	bathe in the lake
segeln	sail
an den Strand gehen	go to the beach
tauchen	dive
wandern	hike
windsurfen	windsurf
Was kann man dort machen?	What can you do there?
Man kann ... besuchen.	'One'/People/ You can visit ...
Die Stadt ist bekannt für ...	The town is well known for ...
Ich werde (eine Woche) bleiben.	I will stay (for a week).



[Listen](#)

Read the Strategy Box for ideas to link sounds and spelling.

Click to add text

Oft benutzte Wörter

• High-frequency words

am Montag	on Monday
am Dienstag	on Tuesday
am Mittwoch	on Wednesday
am Donnerstag	on Thursday
am Freitag	on Friday
am Wochenende	at the weekend
sehr	very
nicht sehr	not very
ziemlich	quite
immer	always
nicht immer	not always
oft	often
nicht oft	not often
nie	never
alles	everything
dort	there
teuer	expensive



[Listen](#)

Strategie 5

Using your key phonics words to make links

You learned the key sounds of German in Chapter 1 (page 8). One good strategy for remembering new words is to group them together with others with the same sound-spelling pattern. Here are some from Chapter 5:



Freund → Deutschland



Biene → Kuscheltier



Sterne → Imbissstube, Strand



Wildwassersport → Mineralwasser, ich werde, wandern, windsurfen



Schlange → Schloss, Schwimmbad, Schlüsselanhänger, schwimmen

Look back at the Wörter pages from Chapters 1–4 and add to your lists.



Some words have more than one key phonics sound. How many can you spot in the examples above? For example, *Kuscheltier*.

www.textivate.com

Username: openacademy

Password: surname800

Go to 'myresources' to find your work.

Year 8 History: Democracy and the Suffrage Movement

Britain prides itself in being a **DEMOCRACY**. This means people have an equal say in who runs the country and how. But in the 1800s it meant something very different to today...

The people were not equally represented through enough **CONSTITUENCIES**

To vote you had to be over 21, own property and **MALE** (only 3% of men could vote)

There were only two main parties: **WHIGS** and **TORIES**

Voting was not anonymous

GENERAL ELECTIONS were held every 7 **YEARS**

The **Chartists** are an example of a campaign group that tried to change this:

This was a **working-class** movement, which emerged in 1836 and was most active between 1838 and 1848. The aim of the **Chartists** was to gain political rights and influence for the working classes.



Chartists argued more men should be able to vote., MPs should be paid, secret ballot, annual elections, equal-sized electoral districts. They organised huge rallies and petitions to Parliament in the 1840s. Although there was a Chartist riot in Newport in 1839, Britain avoided the revolutions that swept Europe in 1848. Most of the Chartists demands eventually became law.

Timeline of Key Events

1897	NUWSS formed. Millicent Fawcett is leader.
1903	WSPU formed by Emmeline Pankhurst and daughters.
1905	Militant Campaign begins
1908	Mass rally in London – 300,000 to 500,000 activists attend. Window smashing using stones with written pleas on them.
1909	Hunger strike and force feeding starts – Marian Wallace Dunlop becomes the first hunger striker.
1913	Militant bomb and arson campaigns and increasing arrests which results in the passing of the “Cat and Mouse” Act : hunger strikers temporarily released then rearrested to prevent dying in police custody
1913	Emily Wilding Davison attempts to pin a Suffragette scarf onto the King’s Horse at the Derby. She is struck by the horse and dies 4 days later.
1914	WW1 starts – Suffragette leaders urge women to join the war effort. NUWSS continues to campaign for recognition for their work.
1918	The Representation of the People Act is passed, allowing men over 21 and women over 30 to vote.

Emmeline Pankhurst – WSPU

Led the WSPU from October 1903. Took more militant action such as windows smashing, **arson** and **hunger strikes**. Arrested numerous times, went on **hunger strike** and was force fed. Died in 1928.

Christabel Pankhurst – WSPU

Became a speaker for the WSPU in 1905. She trained as a lawyer but could not practice as woman. Arrested with her mother. Fled England in 1912 for fear of being arrested again. Unsuccessfully ran for Parliament in 1918.

Emily Wilding Davison – WSPU

Joined WSPU in 1906. Became a **suffragette** full time. Frequently arrested for number of crimes inc. setting fire to post box. By 1911, become increasingly militant.

Millicent Fawcett – NUWSS

Leading **suffragist** and led **NUWSS**. Played a key role in getting women the vote. Dedicated to using **constitutional** means, and argued that militancy was counter-productive.

Timeline of Key Events

28 June 1914	Assassination of Arch-Duke Franz Ferdinand
4 August	Britain declares war on Germany
August to December 1914	Germany's Schlieffen Plan fails to defeat France and Britain quickly; system of trenches is dug from Switzerland to the English Channel: STALEMATE
April 1915	Second Battle of Ypres – poison gas used for the first time
31 May–1 June 1916	Battle of Jutland – the only major sea battle of the war proves inconclusive
1 July – Nov	Battle of the Somme
6 April 1917	USA declares war on Germany
March 1918	Russia signs the Treaty of Brest Litovsk with Germany after the Bolshevik Revolution
9 Nov 1918	Kaiser Wilhelm abdicates
11 Nov 1918	Germany signs armistice, ending the war

Why did British men join up in 1914?

Patriotism	British men were brought up to love their King and country
Social pressure	Fear of being called a coward or being given a white feather by a woman
Sense of adventure	Many British men had never travelled abroad – this was a chance to see the world!
Propaganda	British propaganda posters used very persuasive techniques
Belief in a quick victory	Many men thought that the war would be 'over by Christmas'

Long-Term Causes of World War One

Militarism – the arms race between Britain and Germany to build Dreadnaughts resulted in increasing tension and conflict between them

Alliances – the Triple Alliance (Germany, Austria-Hungary and Italy) and Triple Entente (Britain, France and Russia) had agreed to support each other in a war

Imperialism – Britain and France had large empires overseas. Germany wanted an empire too, but most of the available land had already been taken, resulting in tension between the 'great powers'

Short-Term Causes of World War One:

Assassination of Franz Ferdinand – Serbian nationalist Gavrilo Princip shot and killed the heir to the Austro-Hungarian throne, along with his wife, while was visiting Sarajevo. This caused Austria to declare war on Serbia, which led to Russia attacking Austria and a domino effect of other nations joining in...



Which new weapons helped Britain to win the war?

Tanks: First used in 1916, they broke through German defences and sheltered British troops in getting across **NO MANS LAND**

Poison gas: Although cruel and at the mercy of the weather, it instilled fear into soldiers on both sides

Airplanes: Very useful for reconnaissance and bombing / preventing bombing raids

Artillery: Forced Germans to remain in their shelters while the British advanced

Why did Germany surrender in November 1918? American entry into the war, Failed German/Ludendorff offensive, German civilians starving due to the Allied Blockade of German ports. This all put pressure on the Kaiser to surrender.

Vocabulary to learn

Conflict
Courage
Inspire
Relevant
Anxiety
Protagonist
Synonym
Emphasis
Omniscient narrator

Structure analysis - methods:

- Zoom in/out
- Repetition of an image/idea
- Links and connections between paragraphs
- Shifts:
 - inside to outside (and vice versa)
 - focus
 - time
 - topic
 - setting/place
 - mood/atmosphere
 - description to dialogue (and vice versa)

Language analysis Checklist:

- Link to task
- Relevant quote
- Meaning of quote
- Method named
- Effects explained
- Word zoomed in on
- Meaning of word
- Implied meanings
- Aim higher: layers of meaning

Evaluate

weigh up, form a judgement

This question asks you to **evaluate** the **extent** to which you agree with a given statement about a text.

how much

You will need to consider:

- The impressions (**opinions**) you have of the text in relation to the statement
- The methods the writer has used to create these impressions
- How the particular methods create these impressions

Words/phrases
Linguistic devices
Structural features
Sentence forms

Suggested Reading



Sentence Form	Definition	Example
Fragment sentence	An incomplete idea.	<i>Rolling thunder.</i>
Simple sentence	Contains one complete idea in an independent clause.	<i>The lightning flashed.</i>
Compound sentence	Contains two independent clauses linked by a conjunction or a semi-colon.	<i>The lightning flashed <u>and</u> the rain fell. The lightning flashed; the rain fell.</i>
Complex sentence	Contains an independent clause and at least one dependent clause.	<i>Despite the thunder and lightning, there was no rain.</i>

Literary devices and word class

- Metaphor – a literal comparison – *she was a monster*
- Personification – human qualities – *the grass danced in the wind*
- Simile – as/like/as if – *he was like a man possessed*
- Onomatopoeia – the sound words – *bang, pop, sizzle*
- Alliteration – same starting sounds – *really rather raucous*
- Lists – to emphasise many reasons
- Verbs – doing words
- Adjectives – describing words
- Nouns – objects or abstract things e.g. love
- Adverbs – describe doing words e.g. wrote neatly
- connotations of words – associations – night-time = mystery

Activities:

- Look up and define any of the key words in the purple box that you don't feel confident with.
- Look, cover and copy the key words in the purple box. Do this each day until you get the spelling of them correctly. You could complete your learning of these words by getting a parent or sibling to test you on all of them.
- Read the poem **The Bully Asleep** on the next page then explain the conflict that is shown in this poem.
- When one pupil read **The Bully Asleep** they said he deserves to be treated this way. Analysing structure and language explain if you agree or disagree with this statement.
- Either describe a day in the life of **Bill Craddock** or a story about him inspired by this poem. Use some of the language devices in the blue box.
- Draw a picture of the scene in the poem and label it with quotations from the text.
- If you could be one person in this poem explain who you would be and why?
- Write a short story (200–300 words) that involves a bully or instances of bullying. Use first or third person and past or present tense, but make sure that this is consistent throughout. Use as many of the literary devices in the blue box as you can and make sure you include nouns, adjectives, verbs and adverbs that are ambitious and effective. Plan your story before you begin.
- Read or listen to a book (from the link on the next page) that explores elements of conflict. Then, write a review of it (100–200 words), detailing what you found most enjoyable and perhaps, what you didn't like so much. Imagine you are writing it for a website that young readers will look at to decide what to read next.
- Read the article below and highlight the different types of sentence. Highlight any emotive language that has been used. Using PEE skills that you have learnt write a PEE paragraph explaining how language and sentence length has been used to make the reader feel sorry for **Ruby Sam**.
- Explain your view of bullying and why it happens.

The Bully Asleep by John Walsh

This afternoon, when grassy
Scents through the classroom
crept,
Bill Craddock laid his head
Down on his desk, and slept.

The children came round him:
Jimmy, Roger, and Jane;
They lifted his head timidly
And let it sink again.

‘Look, he’s gone sound asleep
Miss’,
Said Jimmy Adair;
‘He stays up all the night, you
see;
His mother doesn’t care.’

‘Stand away from him children.’
Miss Andrews stopped to see.
‘Yes, he’s asleep; go on
With your writing, and let him
be.’

‘Now’s a good chance!’ whispered
Jimmy,
And he snatched Bill’s pen and hid
it.
‘Kick him under the desk, hard;
He won’t know who did it.’

‘Fill all his pockets with rubbish –
Paper, apple-cores, chalk.’
So they plotted, while Jane
Sat wide-eyed at their talk.

Not caring, not hearing,
Bill Craddock he slept on;
Lips parted, eyes closed –
Their cruelty gone.

‘Stick him with pins!’ muttered
Roger.
‘Ink down his neck!’ said Jim.
But Jane, tearful and foolish,
Wanted to comfort him

When Ruby Sam Youngz was singled out by a bully at the age of 10 in her last year of primary school, she felt isolated and confused. She’d just moved with her family from England to Wales and the bully honed in on her accent. They then started mocking her appearance. “Nothing really made sense to me,” she says. “I’m in a new place, I don’t really know anyone, no one likes me, and I really do not know why.”

Youngz says the relentless bullying, which continued through secondary school, had a knock-on effect in all areas of her life, and she took up smoking and drinking in an attempt to cope. Now aged 46, it is only in the past year that she has come to terms with the effect that the bullying had on her.

“I felt like ‘no one else likes me, so I don’t like me’,” she says.

Her experience underlines a painful truth. Children, for all their innocence and inexperience of the world, can be some of the most vicious bullies. Their actions, perhaps less hindered by the social norms we learn in later life, can be merciless, violent and shocking. And they can have life-long implications for the victims.

You might also like:

- **Can this technology put an end to bullying**
- **The transformational power of how you talk about your life**
- **What is the best way to stop internet trolls**

<https://stories.audible.com/start-listen>.

YEAR 8 - REASONING WITH DATA...

Measures of location

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:

- Understand and use mean, median and mode
- Choose the most appropriate average
- Identify outliers
- Compare distributions using averages and range

Keywords

Spread: the distance/ how spread out/ variation of data

Average: a measure of central tendency — or the typical value of all the data together

Total: all the data added together

Frequency: the number of times the data values occur

Represent: something that shows the value of another

Outlier: a value that stands apart from the data set

Consistent: a set of data that is similar and doesn't change very much

Mean, Median, Mode

The Mean

A measure of average to find the central tendency... a typical value that represents the data

24, 8, 4, 11, 8

Find the sum of the data (add the values) 55
Divide the overall total by how many pieces of data you have $55 \div 5$

Mean = 11

The Median

The value in the center (in the middle) of the data

24, 8, 4, 11, 8

Put the data in order 4, 8, 8, 11, 24
Find the value in the middle 4, 8, 8, 11, 24

Median = 8

NOTE: If there is no single middle value find the mean of the two numbers left

The Mode (The modal value)

This is the number OR the item that occurs the most (it does not have to be numerical)

24, 8, 4, 11, 8

This can still be easier if the data is ordered first
4, 8, 8, 11, 24

Mode = 8

Choosing the appropriate average

The average should be a representative of the data set — so it should be compared to the set as a whole — to check if it is an appropriate average

Here are the weekly wages of a small firm

£240	£240	£240	£240	£240
£260	£260	£300	£350	£700

Which average best represents the weekly wage?

The Mean = £307

The Median = £250

The Mode = £240

Put the data back into context
Mean/Median — too high (most of this company earn £240)
Mode is the best average that represents this wage

It is likely that the salaries above £240 are more senior staff members — their salary doesn't represent the average weekly wage of the majority of employers

Identify outliers

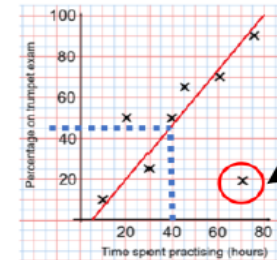
Outliers are values that stand well apart from the rest of the data

Outliers can have a big impact on range and mean. They have less impact on the median and the mode

Sometimes it is best to not use an outlier in calculations

Height in cm
152 150 142 158 182 151 153 149 156 160 151 144

Where an outlier is identified try to give it some context. This is likely to be a taller member of the group. Could the be an older student or a teacher?



Outliers can also be identified graphically e.g. on scatter graphs

Comparing distributions

Comparisons should include a statement of average and central tendency, as well as a statement about spread and consistency

Here are the number of runs scored last month by Lucy and James in cricket matches

Lucy: 45, 32, 37, 41, 48, 35

James: 60, 90, 41, 23, 14, 23

Lucy

Mean: 39.6 (1dp), Median: 38, Mode: no mode, Range: 16

James

Mean: 41.8 (1dp), Median: 32, Mode: 23, Range: 76

James has two extreme values that have a big impact on the range

James is less consistent than Lucy because his scores have a greater range. Lucy performed better on average because her scores have a similar mean and a higher median

YEAR 8 - REASONING WITH DATA...

The data handling cycle

@whisto_maths

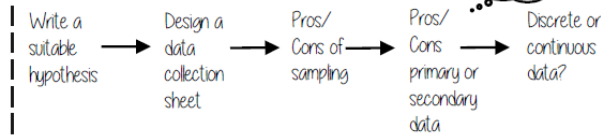
What do I need to be able to do?

- By the end of this unit you should be able to:
- Set up a statistical enquiry
 - Design and criticise questionnaires
 - Draw and interpret multiple bar charts
 - Draw and interpret line graphs
 - Represent and interpret grouped quantitative data
 - Find and interpret the range
 - Compare distributions

Keywords

- Hypothesis:** an idea or question you want to test
Sampling: the group of things you want to use to check your hypothesis
Primary Data: data you collect yourself
Secondary Data: data you source from elsewhere e.g. the internet/ newspapers/ local statistics
Discrete Data: numerical data that can only take set values
Continuous Data: numerical data that has an infinite number of values (often seen with height, distance, time)
Spread: the distance/ how spread out/ variation of data
Average: a measure of central tendency – or the typical value of all the data together
Proportion: numerical relationship that compares two things

Set up a statistical enquiry



Features of a data collection sheet

Grouped or ungrouped categories	Data Title	Tally	Frequency

Total number of that group observed

Design and criticise a questionnaire

The Question - be clear with the question - don't be too leading/ judgemental

e.g. How much pocket money do you get a week?

Responses – do you want closed or open responses? – do any options overlap? – Have you an option for all responses?

Zero option → ☐ £0 ☐ £0.01 - £2 ☐ £2.01 - £4 ☐ more than £4 → More option

NOTE: For responses about continuous data include inequalities $< x \leq$

Pictograms, bar and line charts

Pictogram

Language	
French	●●●●●
Spanish	●●●●●
German	●●●●●

● = 4 people

- Need to remember a key
- Visually able to identify mode

Bar Chart



- Gaps between the bars
- Clearly labelled axes
- Scale for the axes
- Title for the bar chart
- Discrete Data

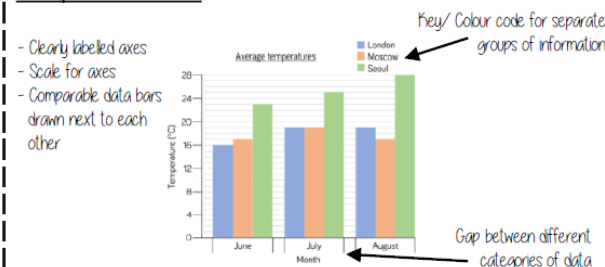
Line Chart



- Gaps between the lines
- Clearly labelled axes
- Scale for the axes
- Discrete Data

Multiple Bar chart

Compares multiple groups of data



Draw and interpret Pie Charts

Remember a circle has 360°

There were 60 people asked in the survey (Total frequency)

Multiple method: As 60 goes into 360 – 6 times. Each frequency can be multiplied by 6 to find the degrees (proportion of 360)

3.2 '3.2 out of 60 people had a dog'

The fraction of the 360 degrees represents dogs

$3.2 \times 360 = 1152^\circ$

Use a protractor to draw

This is 1152°

Represents quantitative, discrete data

Grouped quantitative data

Time (minutes)

Time (minutes)	Frequency
$0 \leq t < 5$	4
$5 \leq t < 10$	6
$10 \leq t < 15$	5
$15 \leq t < 20$	8
$20 \leq t < 25$	11
$25 \leq t < 30$	1

More than or equal to 25 and less than 30 minutes

The use of inequalities shows that this will be a frequency diagram

This is a frequency diagram

There are no gaps between the bars

Grouping the data is useful if there is a large spread of data to begin with

Find and interpret the range

The range is a measure of spread

A smaller range means there is less variation in the results – it is more consistent data

A range of 0 means all the data is the same value

Step 1 has the smallest range – this indicates it has a more consistent flow of customers each week

Draw and interpret line graphs

Commonly used to show changing over time

The points are the recorded information and the lines join the points

Line graphs do not need to start from 0

More than one piece of data can be plotted on the same graph to compare data

It is possible to make estimates from the line e.g. temperature at 9.30am is 5°C

Step 1: highest value

Step 2: lowest value

Difference between the biggest and smallest values

Range of customers = $25 - 22 = 3$ (Step 1)

Year 8 RS: How do Christians interact with culture and society?

Key words	
Worship	Act of religious honour or devotion
Liturgical worship	service which follows a set pattern
Non-liturgical worship	service which does not follow a text or set pattern
Informal Worship	a type of non-liturgical worship which is spontaneous
Private Worship	Someone praises or honours God on their own
Prayer	Communicating with God.

The Church

Church means a gathering of people and originally the church didn't have special buildings but met at people's homes. The church therefore is about people who meet to worship Christ. *"And God placed all things under his (Jesus') feet and appointed him to be head over everything for the church, which is his body"*. The church as a building provides a place where Christians in the local community can meet, socialise, worship and gain spiritual guidance. Christians meet at church on a Sunday, but many churches have events happening throughout the week. Traditionally the role of the church helped with schooling, medical needs and other services. In modern times the church has projects in the community to help others following the teachings of Jesus.

Worship

It is a way for Christians to show love and respect for God. It shows Christians how important God is to them. They worship in different ways but the public worship takes place at church on Sunday. Christians pray to ask for forgiveness, to say thanks, to ask for help or for comfort and strength. There are different types. Liturgical, non-liturgical, informal and private

Prayer

Prayer is all about communication with God. Christians ask God for help for themselves or others, ask for forgiveness, to be provided with strength or comfort or to say sorry, confess sin and ask for forgiveness or to praise God. People pray in different ways, which might include standing, kneeling or using rosary beads – for Catholics and Orthodox Christians use Icons. Christians do believe God answers prayers, but because he is transcendent (beyond our understanding) we cannot understand when or how he does it and perhaps not in the way we would want or expect. For example when Jesus is praying in the Garden of Gethsemane he asks God to *"remove this cup from me"*. He is asking God to help him not have to go through the crucifixion. God doesn't stop this as there is a purpose to Jesus' suffering.

The Lord's Prayer

This is the prayer which Jesus taught his disciples to pray. *"Our father who art in heaven...."*. This is an example of set prayer and is important as it sets out how to live, for example to show forgiveness to others. It also reminds how God is part of the whole community and is said out loud together.

Pilgrimage

A pilgrimage is a special religious journey and can be seen as an act of worship in itself.

For Christians the Holy Land, where Jesus lived and died is particularly important. Pilgrimage is important as it allows people to get closer to God, strengthen faith, ask for forgiveness, pray, ask for a cure, help others and meet others who share your faith. Two important places are Lourdes and Iona.

Lourdes — In France dedicated to Mary as Bernadette believed to have seen visions of Mary in the 19th Century. A spring of water was discovered which had healing powers. Now millions of people have been to drink from the spring of water in the hope of being healed. Many sick or disabled people go to Lourdes.

Iona — An Island off the west coast of Scotland. In the 6th Century St. Columba, an Irish missionary brought Christianity to Scotland and set up a small monastic community there. Pilgrimages happen there in dedication to the virgin Mary. The community in Iona hold daily services in the Church leading a seven-mile hike to holy spots.

Festivals

Festivals remember important events in a religions calendar, for Christians this is Christmas and Easter. They are centered around Jesus who is the most important person in their religion.

Christmas — Remembers the birth of Jesus — his incarnation. It is celebrated on the 25th December. Trees and homes are decorated with nativity scenes. Lights remember Jesus is the light of the world. Carol services happen in Churches with readings from the bible. Children act out nativity plays and midnight mass takes place on Christmas Eve. *“I bring you glad tidings that today a king is born”*

Easter — It is the most important festival which celebrates Jesus’ resurrection from the dead leading up from holy week. Jesus was crucified on Good Friday and rose on Easter Sunday. Special services take place and processions led by someone carrying a cross. On Easter Sunday special services take place with hymns which celebrate the resurrection. Eggs are used as a reminder of new life. *“Christ is risen from the dead”*.

The Sacrament of Baptism

This is important as it is the initiation ceremony to become a Christian and part of the church and therefore receives the grace of God. Sins are forgiven and they start a new life in Christ. Jesus was baptized by John in the river Jordan, here is received the Holy Spirt and sets an example for Christians to do the same. *“Therefore go and make disciples of many nations, baptising them in the name of the father, son and Holy Spirit.*

Infant Baptism — Catholic, Orthodox, Anglican Methodist practice this. Everyone is a descendent of Adam and Eve and therefore carries Original Sin and so baptism washes this away. It also welcomes them to the church community.

Believer’s Baptism — Baptist and Pentecostal’s think children are too young to understand the meaning and therefore don’t baptise infants. They have believers baptisms when a person is old enough to understand the meaning behind what they are doing. This includes a full immersion in a pool to wash away sin and start a new life in Jesus.

Year 8 Music Knowledge Organiser

openacademy

Ostinatos

Ostinatos are musical patterns that repeat. They can be melodic (has pitch) or rhythmic (has duration) and never change. Don't confuse these with motifs which are similar but those patterns can shift in terms of pitch, duration or instrument!

Baroque 1600-1750

Romantic 1840-1900

Jazz 1910-1930

Disco 1970-1980

EDM 2000 -

Classical 1750-1840

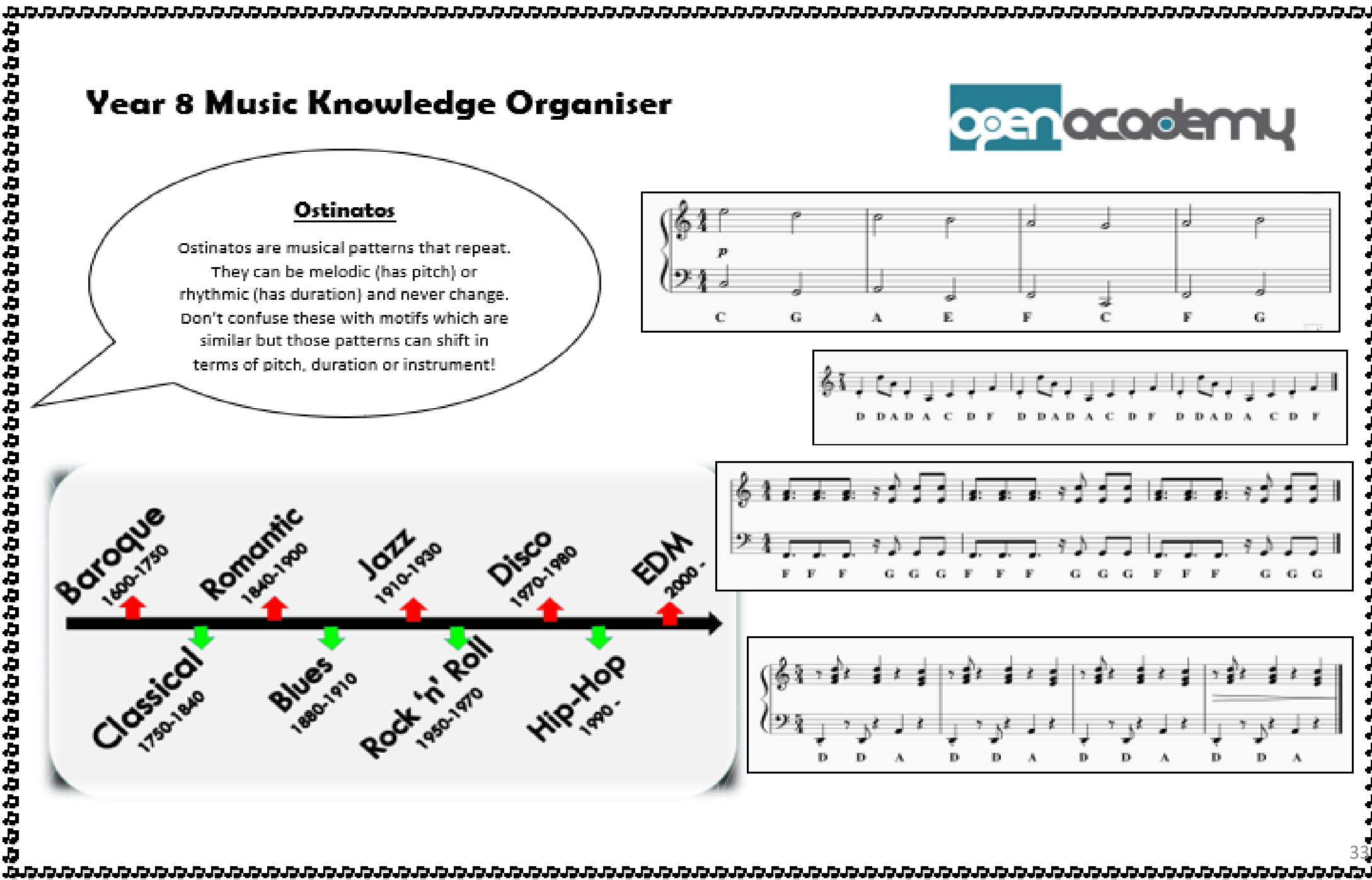
Blues 1880-1910

Rock 'n' Roll 1950-1970

Hip-Hop 1990 -

Musical Examples:

- Example 1: Piano accompaniment with a repeating bass line (C-G-A-E-F-C-F-G).
- Example 2: Single melodic line with a repeating eighth-note pattern (D-D-A-D-A-C-D-F).
- Example 3: Full musical phrase with a repeating bass line (F-F-F-G-G-G-F-F-F-G-G-G-F-F-F-G-G-G).
- Example 4: Repeating bass line (D-D-A-D-D-A-D-D-A-D-D-A) under a complex melodic line.

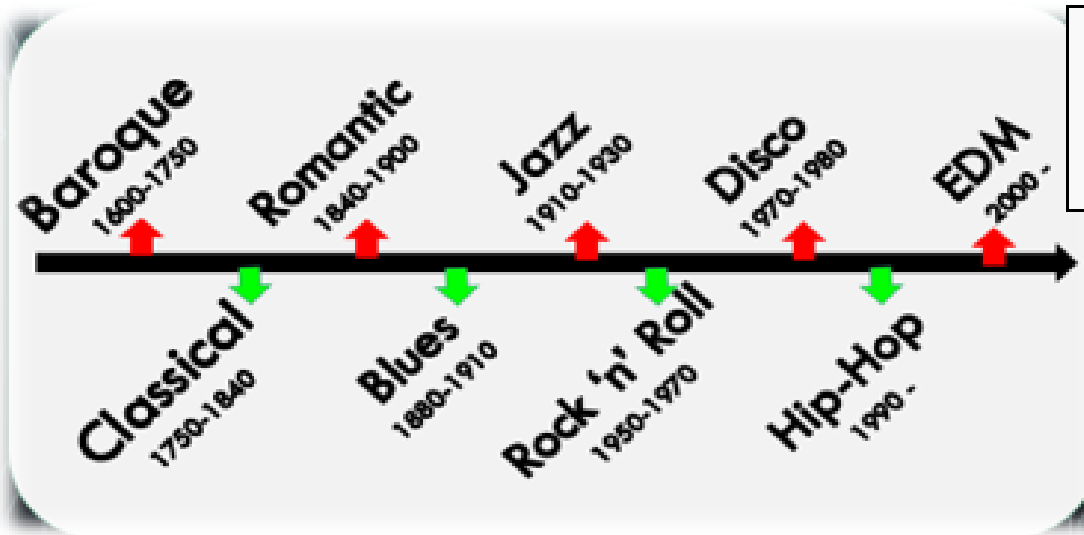
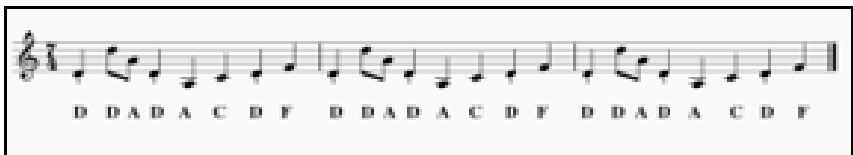
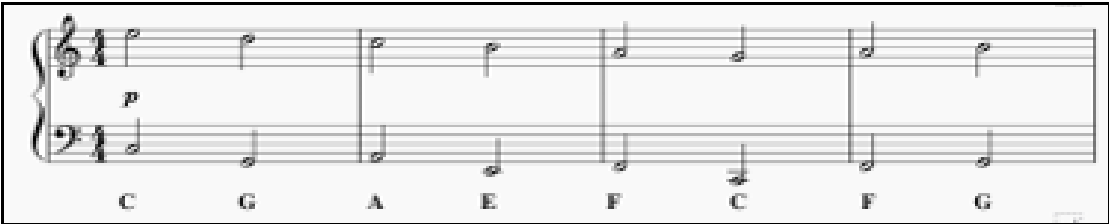


Ostinatos

Ostinatos are musical patterns that repeat.
They can be melodic (has pitch) or rhythmic (has duration) and never change.
Don't confuse these with motifs which are similar but those patterns can shift in terms of pitch, duration or instrument!

Ostinatos

Ostinatos are musical patterns that repeat.
They can be melodic (has pitch) or rhythmic (has duration) and never change.
Don't confuse these with motifs which are similar but those patterns can shift in terms of pitch, duration or instrument!



Baroque Era – 1600 - 1750

The Baroque era in music history occurred between 1600 to 1750. Baroque music has strong melodies and is very organized. The music is very dramatic because it contains lots of sudden contrasts in dynamics and composers began to experiment with different instruments like the trumpet and the clarinet.

Famous composers include J.S. Bach, Vivaldi (who wrote the Four Seasons), Purcell and Handel.



Classical Era – 1750 - 1825

- The classical era lasted from 1750 – 1825. During this time, the orchestra, the piano and opera were developed!
- The music was more lyrical and less organised than the Baroque era. Symphonies, sonatas and concertos were invented.
- The famous composers were Mozart, Beethoven and Haydn.



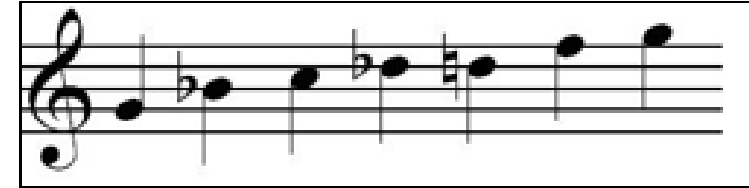
Romantic Era – 1840 - 1900

Key features

- Bigger range of dynamics
- Larger range of pitch
- Music that expressed emotion
- Music that represented nationalism or nature

Famous composers

Debussy, Prokofiev, Mendelssohn and Tchaikovsky!



C	C	C	C
F	F	C	C
G	F	C	C

Blues and Jazz – 1880 - 1930

- Blues and Jazz music share a lot of similarities but jazz uses more extreme improvisation whereas Blues usually sticks to key notes based on the blues scale (see above!)
- Improvisation means making something up on the spot, with no preparation!
- It originated in America and came from the slave trade, where slaves sang about their woes and struggles and used those songs as they did their labour, hence why the blues has its name.
- The Blues produced a very popular chord progression called the 12 bar blues which became the basis for a lot of songs and was used in a lot of early rock 'n' roll (see above – read from left to right, top to bottom)
- Jazz popularised instruments such as the trumpet, saxophone, clarinet, flute and trombone!
- The genre developed 7th chords (chords are 2 or more notes played at the same time) and swing rhythms.

Rock 'n' Roll – 1950 -

- ✓ The Beatles
- ✓ The Rolling Stones
- ✓ Led Zeppelin
- ✓ Pink Floyd
- ✓ AC/DC
- ✓ Fleetwood Mac
- ✓ Queen
- ✓ Elvis Presley

Key features

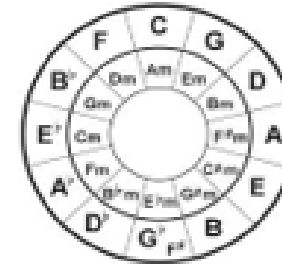
Rock 'n' roll music invented the band formula still being used to this day, using guitars, drums and vocals. Songs usually contained some sort of instrumental solo section and the lyrics centred around more adult content. Rock music has developed into many branches since the 1950's including metal, punk, soft and heavy.

Disco – 1970 – 1980

Disco is a genre of dance music and a subculture that emerged in the 1970s from the United States' urban nightlife scene.

The disco sound usually has a "four-on-the-floor" beats, syncopated basslines, and string sections, horns, electric piano, synthesizers, and electric rhythm guitars.

The most famous artists from Disco are ABBA, the Bee Gees (with Saturday Night Fever) and Gloria Gaynor – I Will Survive which uses the circle of 5ths chord progression!



Hip-Hop/Rap

- In the 1990's, hip-hop and rap became very popular, often talking about social or political issues
- Recognisable drum beats or samples from others songs were often used as a bedding track for lyrics
- Beat-boxing and body percussion also became popular meaning this music was accessible to anyone
- Rap lyrics often have a mix of perfect and imperfect rhymes and are set to a 4/4 time signature to allow for an easy rhythmic flow